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ABSTRACT

This paper describes an instructional method designed to increase opportunities for students to learn and practice appropriate social skills. The strategies for development and implementation of such structured programs of nature-based and animal-based activities are based in part on a pilot program in three urban elementary and middle schools. Discussions on the nature of the importance of social skills, nature-based instruction, the strength of the animal-human bond, and establishing a structured program of animal-based and nature-based activities are presented. The variables to be considered in establishing such a program of humane education include administrative and logistical support, instruction, animals, plants, and the level of involvement or roles of those who participate. A list of resources is provided containing contact points in humane education organizations and other related organizations. Contains 19 references. (DDR)

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by

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Beetles, Beechnuts, and Behavior: Using Nature-based Activities to Develop Social Skills

Presented at the 1997 CEC Annual Convention, Salt Lake City
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Social skills

The inability to engage in appropriate social interactions and to establish and maintain positive relationships with other persons is a defining characteristic of emotional and behavioral disorders. Extensive research has been conducted on social skills training, however few training programs can demonstrate comprehensive evidence of basis factors including conceptual soundness, appropriate assessment procedures, treatment fidelity data, and generalization of skills to realistic settings over time (Mathur & Rutherford, 1996).

This poster presents one highly engaging instructional method designed to increase opportunities for students to learn and practice appropriate social skills. Strategies for development and implementation of structured programs of nature- and animal-based activities are based in part on a pilot program in three urban elementary and middle schools.

Nature-based instruction

In 1984, Edward O. Wilson coined the term "biophilia" to describe a deep human biological need for affiliating with life and nature. This human inclination to affiliate with the natural world, Kellert (1996) asserted, has emerged because the values of nature have conferred distinctive advantages to people in the process of evolutionary development. This affiliation ensures not only material and physical well-being, but also satisfaction of emotional, intellectual, and spiritual needs. Kellert and

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colleagues (Kellert & Westervelt,1983; Kellert, 1996) identified four distinct stages in children's developing values of nature and living diversity.

Stage 1- young children under six years of age are egocentric, domineering, and self-serving in their values of animals and nature. Young children are focussed on the practical and material exploitation of nature as well as the mastery, physical control, and dominance. There is little recognition or appreciation of the autonomous feelings and independence of animals.

Stage 2- children age six to nine years show a significant increase in appreciation of the autonomy of other creatures. Children became more aware of animals as possessing interests and feelings unrelated to themselves, and begin to see animals, particularly creatures seemingly like humans in behavior and intelligence, as having separate interests and desires. Children began to acknowledge that animals might suffer pain and distress, and consequently develop a "conscience" toward the natural world. Children are motivated by more than just the possibility of being punished for harming other creatures and view animals and nature as having a right not to be selfishly manipulated.

Stage 3- children between age nine and twelve experience a dramatic increase in factual knowledge and understanding about animals and the natural world. An emphasis in cognitive perspectives accompanies this period of bolder interaction of children with nature. Children experience increased curiosity, interest, and fascination for the nonhuman world and how it works.

Stage 4- adolescents between thirteen and seventeen years of age experience a sharp increase in abstract, conceptual, and ethical reasoning about the natural world. Youth are concerned with ethical responsibilities toward the natural world and become more aware of responsibilities for conservation.

In drawing general comparisons between children and adults, Kellert found that both children and adults reveal strong humanistic perspectives of the natural world, particularly pronounced affection for individual animals, higher vertebrates, and domesticated pets, while they expressed similarly strong negativistic values, especially fear of invertebrates, snakes, and certain wilderness settings. However, children generally expressed less concern than adults for the practical benefits of nature, while adults showed less interest than children and youth in direct experience of the outdoors and wildlife.

These developmental findings are consistent with recent work by Kahn and colleagues (Kahn & Friedman, 1995; Howe, Kahn, & Friedman, 1996) who examined interviewed children in inner-city Houston and in two communities in the Amazon region of Brazil about their knowledge of and beliefs about the natural environment, including plants and animals. Across populations and ages (mean age range 7.5 to 13.8 years), participants reported great concern about their natural environment, judged acts of environmental harm to be wrong, and believed such acts to be wrong even in scenarios in which local rules allow the harmful actions. Further, in examining the justifications used to support their reasoning, Kahn and colleagues found a developmental increase in use of biocentric reasoning (in which nature itself is granted moral standing) and a decrease in homocentric (human-oriented) reasoning.

Strength of the Human-Animal Bond

Interactions with animals and nature have been found to have physical, emotional and social benefits for humans:

- One year after discharge of coronary artery disease patients from a coronary care unit, Friedmann, Katcher, Lynch, & Thomas (1980) found that irrespective of the seriousness of

their original attack, pets enhanced the recovery of their owners.

- In a study of elderly female pet owners and non-owners, some living alone and some living with other humans, Goldmeier (1986) found that scores on a test of morale factors were higher for elderly women who lived without other people, when they had the companionship of a pet.
- Pet ownership may aid in development of adaptive personality traits, promote development of self-concept and self-esteem, heighten the capacity to love and empathize, and encourage children to develop a more realistic view of their own parents and parenting functions (Levinson,1978).
- Pets provide children love and tactile (touch) reassurance without criticism; animals give freely of their affection, without judgment (Ross, Vigdor, Kohnstamm, DiPaoli, Manley, & Ross, 1984).
- Pets serve at least seven psychologic and social functions that benefit their owners: providing companionship, keeping people active, stimulating care-giving activity, making their owners feel safe, permitting exchange of affectionate touch, being an interesting visual object, and being a stimulus to exercise (Katcher, 1985).
- Early adolescent pet owners use their animals for stress reduction and are more likely than their non-owning peers to have higher self-esteem (Covert, Whiren, Keith, & Nelson, 1985).
- Children who have a bond with a dog or cat show more maturity in their cognitive, moral and emotional development than children who do not have such pets (Poresky & Hendrix, 1988).

A limited number of programs and activities designed to improve academic, affective, and behavioral outcomes for children and

youth have been studied.

- Young children learn through direct experience and play; multiple and repeated experiences in the natural world to allow learning to take place (Peterson Institute, 1990). Experiences with nature and animals enhance children's curiosity (Rutherford, 1995; Wardle, 1995), presenting disequilibrium between real-life conceptions and scientific explanations and providing stimuli for learning. Involvement with nature and animals also provides a context for enriching interactions with peers and adults.
- By addressing the fundamental need to care for things outside ourselves, nature-based education fosters a greater sense of caring for wild creatures and their habitats as well as for fellow human beings (Wilson, 1995).
- In examining the impact of outdoor education program, Crompton and Sellar (1981) found significant positive change in students' self-esteem, as well as improvement in social relations with peers, such as enhancement of friendships and greater social-personal adjustment.
- Katcher and Wilkins (in press) found that therapeutic interaction structured around animal contact and nature resulted in significantly fewer aggressive episodes, accelerated learning, and decreased pathological behaviors in the regular school program.

Establishing a Structured Program of Animal- and Nature-based Activities

Nature-based programs provide natural and highly motivating opportunities to teach and reinforce social skills. Students must work together to ensure the welfare of the animals, plants and the environment. Living species rely on the students' care and cooperation. Responsibility for the animals and plants takes

priority over interpersonal conflicts and obsessive, self-stimulatory behaviors. Further, because the behavior of their animal charges are unpredictable, students, including those with attention deficits, are compelled to maintain focus on the ever-changing needs of their animals.

While designing and implementing a structured program of animal- and nature-based activities can be rewarding, it also requires significant commitment of resources, including time and money. Consider these variables in designing a program:

Administrative and logistical support:

- Inform administration and parents of program goals and projected budget.
- Establish health and safety procedures for assessing student allergies, disinfection of cages, routine hand washing before and after touching each animal, rabies vaccines for some mammals, etc.
- Secure plan for care over weekends and school vacations.
- Insure that facilities are adequate for maintaining selected animals and plants. Running hot water is necessity.
- Housing requirements vary considerably by species and number of animals cohabitating. Resolve heating, cooling, ventilation issues before bringing animals into setting.
- Secure sufficient funds to maintain program.

  Estimates for animal species:

  Set-up (initial housing, supplies and animal): $150 per animal

  Maintenance supplies/feed: $50 per month per species

  Continuing and emergency vet care: $100 per month per species
- Establish guidelines for determining the maximum medical expenditure in case of serious illness or injury. Arrange

for humane euthanasia if animal is suffering.

- Insure adult supervision at all times when students are interacting with animals.

Instruction:

- Establish measurable academic, social and behavioral objectives prior to implementation. "Warm feelings and smiling faces" are not sufficient justifications for establishing a nature- and animal-based program in an educational setting.
- Students must be instructed in how to care for plants and animals and must demonstrate the skills to an adult before taking full responsibility for care of a specific animal or plant.
- Establish and enforce rules. Care of other living beings must be number one priority.

Animals:

- Students assist in selection of animals, based on research on housing, feeding, medical care and other requirements. Be wary of nondomesticated species such as hedgehogs, ferrets, and some reptiles and birds which require specialty care. Do not select nocturnal species.
- Determine reproduction policy. Placements for animals must be determined prior to breeding.
- Access local humane societies and animal shelters for animals and/or lists of reputable sources of animals.

Plants:

- Again, students assist in selection of plant species, based on research on climate and soil requirements.

Level of Involvement:

- Specifically, at least four types of interaction with animals occur (McCulloch, 1986):

  1) the individual companion, which is placed with an

individual on a full-time basis;
2) part-time companions, who visit persons in need, but are primary responsibility of someone else;
3) a mascot or group pet, who resides in a therapeutic, classroom, hospital, nursing home or prison; and
4) animals that are part of a living environment, such as a working farm or residential treatment center.

Resources

A number of organizations provide information, resources, and support in developing animal- and nature-based education programs:

- National Association for Humane and Environmental Education, P.O. Box 362, East Haddam, CT 06423-0362, (203)434-8666
- The Delta Society, 289 Perimeter Rd., East, Renton, WA 98055-1329, (206)226-7357
- The American Society for Prevention of Cruelty to Animals (ASPCA), 424 East 92nd Street, New York, NY 10128-6804, (212)876-7700, www.aspca.org
- National Science Teachers Association, 1840 Wilson Boulevard, Arlington, VA 22201-3000, (703)243-7100; publishes several journals for science teachers including *Science and Children*, and books, such as *Classroom Creature Culture: Algae to Anoles*
- National Wildlife Federation, 8925 Leesburg Pike, Vienna, VA 22184-0001; publishes magazines: *Your Big Backyard, Ranger Rick, National Wildlife*, and *International Wildlife*, subscriptions 1-800-588-1650
- National Geographic Society, P.O. Box 98199, Washington, DC 20090-8199, 1-800-NGS-LINE, www.nationalgeographic.com; publishes *World* magazine for children, books and videos
- The Nature Conservancy, 1815 North Lynn Street, Arlington,

VA 22209, (703)841-5300, www.tnc.org

- The National Park Service is organized into regional field areas, call for your area (202)208-4747, www.nps.gov

Local animal shelters and humane societies often have humane educators on staff who will come to schools and speak, give tours of the shelters, and refer teachers to local resources.

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